U.S. EPA ENVIRONMENTAL TECHNOLOGY VERIFICATION PROGRAM

For Immediate Release

Sentinel ™ UV Disinfection System Receives First US EPA/NSF Environmental Technology Verification for Drinking Water Treatment

NSF Testing Verifies Calgon Carbon UV System Inactivates Cryptosporidium

Ann Arbor, MI/Pittsburgh, PA; 1999— NSF International (NSF) and the U.S. Environmental Protection Agency (U.S. EPA) have verified under the Environmental Technology Verification (ETV) Program the performance of the Sentinel™. "The Sentinel™ obtained an estimated 3.9 $\log_{10}$ inactivation of *Cryptosporidium parvum* (*C. parvum*) as determined by animal infectivity methods, at an estimated UV dose of 20 mW-s/cm$^{2.}$ when fed finished (treated but not chlorinated) water that was seeded with *C. parvum* at a flow rate of approximately 215 gallons per minute (gpm)." Sentinel™ is the first product to receive verification under the U.S. EPA's ETV Package Drinking Water Treatment Systems pilot.

The ETV Package Drinking Water Treatment Systems Pilot (managed by NSF) is one of several U.S. EPA ETV programs aimed at establishing the quality of data in the performance of environmental technologies. "The ETV is especially important in today's drinking water environment, in which all 50 states require some sort of pilot testing for new technologies. This verification, backed by both the U.S. EPA and NSF, offers water utility managers and state regulatory officials a uniform method for assessing product performance claims," noted Bruce Bartley, Manager of the Engineering and Research Services Group for NSF.

The verification of Sentinel is the result of rigorous microbiological challenge tests and peer reviews by experts in microbiology and ultraviolet disinfection. The field-testing was conducted by Cartwright, Olsen and Associates, LLC at the Mannheim Water Treatment Plant in Waterloo, Canada, a NSF-qualified field testing organization.

The verification testing of the package plant included seeding with live oocysts. Microbiological preparation and viability studies were conducted at Clancy Environmental Laboratories and the University of Arizona.

"This verification establishes Sentinel's capabilities to also control the protozoan oocyst, Cryptosporidium parvum—a pathogenic microbe of considerable concern to today's drinking water treatment community," said Gary Van Stone, executive director, municipal market development, Calgon Carbon Corporation.

Introduced just seven months ago, Calgon Carbon Corporation's Sentinel UV Disinfection System has broken new ground in UV disinfection of Cryptosporidium. The effectiveness in eliminating Cryptosporidium is based on the ability of high-energy UV light to penetrate the cyst membrane and photochemically inactivate the cyst.

Calgon Carbon Corporation (www.calgoncarbon.com) is a world leader in medium-pressure UV disinfection and advanced oxidation technologies, with more than 250 UV systems and more than 20,000 kilowatts of medium-pressure lamps installed worldwide.

NSF International (www.nsf.org), founded in 1944, develops environmental and public health standards and offers product certification services. NSF is also a World Health Organization Collaborating Center for Drinking Water Safety and Treatment and for Food Safety. The NSF Certification Mark is found on millions of products in consumer and commercial markets worldwide. NSF maintains laboratories in Michigan and California and offices in Ann Arbor, MI; Washington, DC; Brussels, Belgium; Sydney, Australia and Nairobi, Kenya.

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